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VOLUME VI } Whole No. 171 PROVIDENCE, R. I., DECEMBER, 1923 PER YEAR \$2.00
NO. 12 } SINGLE COPY 25 CENTS

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The Official Organ of the Rhode Island Medical Society
Issued Monthly under the direction of the Publication Committee

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NUMBER 12 { Whole No. 171

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ORIGINAL ARTICLES

THE CLINICAL APPLICATION OF SOME NEWER PHASES IN ENDOMETRIAL PATHOLOGY.*

BY ARNOLD STURMDORF, M.D.F.A.C.S.
NEW YORK

When Virchow proclaimed that the presence of a round cell infiltration in any given tissue is the positive and invariable evidence of an inflammatory process, he implanted the prevailing conception of endometritis as a pathological and clinical entity.

Kundrat, in 1873, first opposed this dogma by demonstrating a round cell infiltration in all normal endometria, but it was not until 1908 that the investigations of Hitchman and Adler substantiated Kundrat's contention, recognizing the round cell infiltrate as a normal cyclic, menstrual phenomenon.

These investigations furthermore established the "plasma cell" as the true criterion of an inflammatory process and thus demonstrated the marked if not absolute immunity of the corporeal endometrium to chronic infections; so that the term chronic endometritis, for clinical purposes at least, can be safely relegated to the limbo of the obsolete.

Terminology dominates concept and concept determines practice, and thus we find at the present day, the secretory, menstrual and reproductive disturbances still too frequently categorized as chronic endometritis, with its inevitable therapeutic sequence of tampon, escharotic and curet.

The invariable failure of these established methods offers the most convincing evidence of the incorrect and inadequate knowledge of normal and pathological fundamentals which prompt their use.

In discarding chronic endometritis as a pathologic entity, the question naturally arises—how are we to explain the disturbances of secretory, menstrual and reproductive functions in the endometrium?

To correlate this symptomatology with its pathology, demands a complete revision of current conception of the uterine structure and its dynamics, which I can only touch upon in sketchy outline here.

The specific functions of the uterus in menstruation and gestation demand a wide range in the control of its blood supply and, like the heart, the uterus automatically responds to its fluctuating circulatory necessities, by rhythmic contractions and dilatations, not only during pregnancy, but throughout its functional existence. (Henricius, Lieb.)

The myometrium is composed of smooth muscle fibers, which, like all nonstriated muscles, exhibits the intrinsic phenomenon of rhythmic contraction, independent of any neurogenic stimuli. Not only are these contractions necessary in maintaining the nutritional and functional integrity of the uterus as a whole, but they also serve the equally essential purpose of drainage: the cervical secretions must find free egress from the normal and more especially from the diseased conditions of its mucosa.

Under normal conditions, such drainage is effected, not merely by a passive outflow through a patent os, but by the active rhythmic expression resulting from uterine contraction.

To comprehend this mechanism, it is necessary to dispel the anatomic myth of a cervical sphincter; such a sphincter would imply the existence of a concentrically contracting muscular ring; the structural design of the cervical musculature precludes any concentric closure of its outlet which dilates with every uterine contraction, because its fibers, directly continuous with those of the corpus uteri, do not at any point completely encircle the cervix, but are disposed in a serried succession of oblique circle segments, which, by contracting spirally upward, necessarily shorten every diameter of the uterus, and by their uncoiling in the cervix widen the os like an iris diaphragm in a microscope.

In the cervix, as elsewhere, every infection incites the greatest reaction in its lymphatic system.

The cervical lymphatics may be traced from their lacunar origin in the mucosa, through mi-

*Presented by invitation before the Rhode Island State Medical Society, September 6th, 1923.

nute funnel-shaped ostio, directly to the muscular coat, where they expand into an extensive capillary net which, spreading along the perimysium, enmeshes every fascicle and bundle of the uterine musculature to the peritoneal surface, whence they drain into their collecting channels at the base and top of the broad ligament. (Leopold.)

Thus the normal course of the lymphatics conveys an infection from the cervical mucosa, *not to the corporeal endometrium*, but along the intramuscular planes of the uterus, as an ascending lymphangitis, which impairs uterine contractions by infiltrating the muscle sheaths; then progressing to the periadnexal ramifications, it inhibits tubal peristalsis and agglutinates the fimbrial ostia by the production of velamentous bands: finally reaching the ovaries, it infiltrates their tunica albuginea, impeding the normal rupture of graafian follicles.

It is this ascending intramuscular lymphangitis and periadnexitis, with its resultant impairment of uterine, tubal and ovarian functions, *not an endometritis*, that links the pathology and symptomatology of chronic endocervicitis.

I would characterize the cervical mucosa as the uterine tonsil. This pathogenic parallel finds its applicability when chronic endocervicitis is recognized as a primary infectious focus and its systemic symptoms as toxic manifestations: the ambiguous category of the hypothetical "reflex neurases" is thus brought within the objective range of the toxicoses along modern lines of clinical research.

The enormous resorptive capacity of the uterine lymphatics is evidenced in its gravid and puerperal state.

We have learned to recognize systemic manifestations from primary septic foci in the mouth, the gall-bladder, the appendix, the urethra, etc.; why not from the cavity of the cervix? Why term a symptom toxic there and neurotic here?

Who still believes that the cephalalgia accompanying uterine disorders, the classic "*clavus uterinus*," is due to "pinching of nerve terminals by cicatrices in the angle of a lacerated cervix"? Neurosis is the label, but toxis is the factor.

Infection of the cervix frequently dates back to a "vulvitis" of early infancy; this significant fact illuminates many of the gynecologic disturbances in virgins.

Hess reports the postmortem findings in four infants that had the usual nonvirulent form of vaginitis during periods ranging from "three weeks to one year or more," in all of which the only abnormal condition and sole lesion was an inflammation of the cervix with round cell infiltration of its submucous tissue. On the basis of these findings, Hess concludes that "we must regard the average gonococcus infection, as involving cervix rather than the vagina and must consider the infection a cervicitis rather than a vaginitis."

In adult females, Menge estimates that "95 per cent of chronic gonorrheal infections are located within the cervix."

While the gonococcus is by far the most frequent provocative organism of chronic endocervicitis, streptococcic, staphylococcic and colon bacillus infections are not at all infrequent findings in the order named.

In infants, the exanthems and especially scarlet fever, protracted diarrheas with probable contamination from soiled diapers, and general debilitating conditions seem to confer a special susceptibility to cervical infection, while in adults, congenital maldevelopment of the cervix, more especially when traumatized by cauterizations, dilations, curettage or birth lacerations, embody the most prolific predisposing factors to chronic endocervical disease.

The course of chronic endocervicitis is insidious, and its symptoms vary within a wide range, depending on the intensity and progress of the infection.

Mild cases, limited to the superficial layers of the cervical mucosa, will present a leukorrhea as the only symptom, not necessarily copious or purulent, but intractable.

The sterility of women with conical cervixes is never due to the cervical malformation, but to an existing endocervicitis. Huhner and Reynolds have demonstrated the direct devitalization of spermatozoa by diseased cervical secretions. The same applies to the postpartum sterility in lacerated cervixes.

The dominating pathologic factor that determines the morbidity of a cervical laceration is not the extent of the tear but the incidence of its infection. Such an infection does not remain limited to the lacerated area, but sooner or later involves the entire endocervical mucosa from the external to the internal os.

In the progressive cases, the ascending myometrial lymphangitis inhibits uterine contractions, the blood current in the valveless veins, deprived of its essential *vis a tergo*, is slowed, and the resulting circulatory stasis augments the menstrual flow in the nonpregnant (menorrhagia, metrorrhagia), or impairs decidual evolution in the pregnant with premature expulsion of conceptional products.

The tubal fimbria may become agglutinated and thus establish a barrier to fecundity, while the impeded rupture of graafian follicles through the thickened ovarian tunic will delay the periodic onset of its menstrual term (amenorrhea).

Without extending this detailed analysis beyond the enumerated cardinal manifestations, it would appear sufficiently evident, that the whole symptomatology, the complications and sequelae of chronic endocervicitis, may be readily predicated from its pathologic course as outlined.

The diagnostic features of chronic endocervicitis are typical and plainly evident on inspection: the nullipara complaining of dysmenorrhea and sterility with her conical cervix presenting an inflammatory halo encircling a small pouting os, extruding a tenacious clump of mucus; the lacerated cervix of the parous woman, with its everted hypertrophied lips, honeycombed with nabothian cysts, palpable under a granular surface that bleeds on the slightest touch—all of these, in their varying degrees of intensity, constitute a clinical picture so familiar as to require no special delineation.

Chronic endocervicitis is primarily and essentially an infection of the deeply situated terminal tufts of the endocervical muciparous glands. These glandular sacculi harbor the infecting organisms for years or a lifetime. Their distention from duct occlusion produces the familiar nabothian cysts, which may honeycomb the cervical structures or, becoming purulent, riddle it with miliary abscesses, as shown in the illustration.

It is an axiomatic surgical principle, in the control of all infectious processes, to direct our therapeutic aim at the primary focus of infection. In general and specialistic practice, the escharotic, the dilator and the curet still hold sway as established routine measures, especially for the chronic endocervicitis in the nullipara. Mild escharotics and discriminate dilatation, by promoting drainage, may prove of some benefit in very superficial in-

fections, but curettage cannot be too emphatically condemned in any case.

The curet does not and cannot reach the deeply situated infected racemose tufts of the muciparous glands in the cervical tissues, and it should not injure the utricular tubules of the corporeal endometrium, which is rarely, if ever, involved in the disease, and whose specific functions in menstruation and gestation may be permanently vitiated by the lacerations and inoculations incidental to this time-honored traumatism.

The only positive evidence of chronic corporeal endometritis that I have ever seen, came from uteri that had been cauterized and scraped from one to several times.

For the last five years I have absolutely discarded the therapeutic use of the curet and so far without cause to regret the omission.

In the parous cervixes with infected lacerations, the symptoms emanate from the infection and not from the rent in the cervix; nevertheless, surgery takes cognizance of the rent, but ignores the infection: What are the results?

Leonard tabulated and compared the ultimate effects of cervix amputation and trachelorrhaphy, as performed in Kelly's clinic at the Johns Hopkins Hospital during the past twenty years, with the following conclusions: "The presence of marked endocervicitis should be considered as contraindicating simple trachelorrhaphy, for although trachelorrhaphy may render a mild endocervicitis more amenable to treatment, it cannot be considered, like amputation, a curative measure for this condition." On the other hand "10 per cent of the cervix amputations were followed by a decided augmentation of a pre-existing menorrhagia or dysmenorrhea; four-fifths of the women remained sterile, 50 per cent of the pregnancies that occurred in the remainder terminated prematurely, while among the few who progressed to full term, even a larger proportion experienced difficult and prolonged labor."

Similar results have prompted some surgeons to desist from all tracheloplastic attempts during the child-bearing period, preferring to shut their eyes to the existing condition rather than incur its possible aggravation by standardized procedures of questioned efficacy.

To cure endocervicitis, we must remove the entire infected endocervical mucosa. While endocervicitis persists, its symptoms must persist.

The operation of trachelorrhaphy was originally based on the conception that the local and general manifestations of torn cervixes resulted solely from gaping flaps, and that a cure of the condition demanded nothing more than a plastic closure of the gap. The operation reproduces the original area of laceration and unites its edges by suture. It is obvious that the curative scope of this procedure is thus limited to the cases in which the infection has not extended beyond the lines of the original tear—a rare condition, for we know today that the functional disturbances following cervical lesions which demand surgical intervention signalize the infectious invasion of the entire breadth and depth of the cervical mucosa, and that the conservation of the invaded areas, within the cervical canal beyond the lacerated edges, is productive of the results tabulated by Leonard.

On the same lines, a partial or low amputation of the cervix eliminates only a part of the diseased cervical mucosa, while a complete or high ablation of the entire cervix for chronic endocervicitis is an unwarranted mutilation of its muscular mechanism.

When a cervix splits during labor, the rent runs practically in the direction of its muscle fibers. When the cervix is amputated, its muscle fibers are severed transversely. The spontaneous tear, unless infected, exercises but little influence on the muscular mechanism, while the transverse ablation destroys it completely.

To summarize briefly the reason and remedy for the detailed operative failures, I would state that the cure of a chronic endocervicitis productive of local and general manifestations, whether in the nulliparous or multiparous cervix, demands a complete enucleation of the entire endocervical mucosa, *the preservation of its muscular structure* and the accurate relining of its denuded canal by an ample cylindric flap from its vaginal sheath to obviate cicatricial contractions.

In a previous article on "Tracheloplastic Methods and Results," I have submitted an operative procedure which fulfills the pathologic indications and technical demands as enumerated.

The operation is applicable to infected nulliparous or multiparous cervixes alike.

Omitting, for this occasion, all technical considerations of a purely surgical nature, the clinical aspects of the subject may be tersely summarized as follows: Where we were taught to diag-

nose "Chronic Endometritis" we must learn to recognize a "Chronic Endocervicitis" with its sequelae, a condition in which dilator, tampon and escharotic are absolutely futile, while the curet is not only futile but frequently injurious.

DISCUSSION OF DR. STURMDORF'S ADDRESS.

DR. HUSSEY: It has been a great benefit, I assure you, to hear Dr. Sturmdorf's remarks today, and I am somewhat familiar with his views, yet I think it all the more interesting to hear the man himself express himself so well and so clearly as he has this afternoon.

It is a long step from the ideas which are being employed today to possibly a matter of twenty years ago when I was receiving my first instructions in the hospital in New York. I can remember even then that any woman presenting a pathological condition who was not subject to fainting on manipulation was very certainly curetted, and yet the result was very far from satisfactory. I can remember that most of the cases in a clinic would return time and time again after a most thorough curettage. I think they had what was termed in those days, endometritis. Eventually those patients were pretty apt to come back again.

Now Dr. Sturmdorf has said that the thoroughness of clinical diagnosis was based upon the wrong conception of the function and structure of the endometrium. The process of the endometrium is for the purpose of the reception and development of the ovum, and nature has thrown about that structure a very great safeguard against infection. We used to see and to find cases where the body is sensitive and more or less painful. That sensitiveness comes from the lymphatics and travels up along them. I think the more modern and correct ideas of the infections of the cervix involving the tubes and tubular inflammation through them is going to result in a much more rational survey in the future. Very few of us use curettage now as in the old days.

I want to express my appreciation again to Dr. Sturmdorf.

DR. I. H. NOYES: Dr. Sturmdorf's work has certainly given us all a much better understanding of the cause and proper treatment of these cases. In his paper published in 1916 he pointed out very clearly how the infection of the cervix travels through the muscular layers of the uterus up to the covering of the tubes and ovaries,

and in that way interfering with the normal functions of these organs. It would seem to explain admirably the cause of many of these cases which we speak of sometimes as trephine where there is a minimum of pressure, and we do not find on examination any pathology which we think would account for it. If this infection starting from the cervix is caused the way Dr. Sturmdorf shows us, the new facts in the matter account for the conditions in many of those cases.

His operation for endocervicitis, details of which he did not go into, as possibly most of you know, consists of removing a cone of the cervix, including all the endometrium lining the cervix from the external to the internal os, with the pointed end of the cone at the internal os, and then carrying in to line this cavity a cuff of the outer covering of the cervix. That operation undoubtedly enables one to remove a great deal of diseased tissue with the least amount of healthy cervical tissue, so that it leaves the patient with more of the cervix than any other operation which would accomplish the same result.

I should like to ask Dr. Sturmdorf if he feels that the incident of abortion in these cases to patients who have had this operation done and later become pregnant, if they are any more liable to miscarriages. Of course they have not as much cervix as before and the outer portion of the cervix is thick.

I would like to say that anyone who is interested in vaginal plastic surgery would certainly make a mistake if he has an opportunity to see Dr. Sturmdorf operate and does not take advantage of it.

DR. KEEFE: It is a pleasure to me to listen to a man who has made such an extensive study of this subject. He has convinced me that he is on the right track. Years ago we put those sharp curettes into the uterus. When we stop to think, if we put them in the mouth or nose, what would we have left? We have seen curettes tear off mucous membranes a tremendous amount of clean tissue. Although I have used the curette in many of the cases following abortion, I do not think it is a good thing to use a curette. I have been feeling that way a long time. Use the finger and clean out what is in the uterus without using a curette at all.

I have felt that the lymphatic system is not the only way infection is carried. Because it does

travel through lymphatics convinces me that a lot of those things will pass through the blood vessels. I do not think we ought to lay aside the vascular system as a means of infection.

I often spoke with Dr. Emmons at Narragansett Pier in the summer and talked with him about his operations. He said he amputated the cervix. It would be desirable not to use that operation in women in the child-bearing period. But if it is necessary, an amputation of the cervix is an excellent thing to do. Dr. Sturmdorf can do that beautifully. It is rather a difficult thing for the average one of us to carry out.

He has convinced me from his description of the membranes lining the uterus that we will do harm rather than good in curetting.

THE USE AND THE ABUSE OF PITUITARY EXTRACT IN OBSTETRICS.*

BY BERTRAM H. BUXTON, M.D.
PROVIDENCE, R. I.

The one reason I have attacked this tremendously written up subject is the fact that in spite of the accumulated evidence that has been heaped up before us, many practitioners still continue to use pituitary extract, if not indiscriminately, at least many times unwisely, as evidenced by the end results seen in our hospitals.

It might be interesting to compare in the literature a *résumé* of the use of ergot and the final conclusion arrived at after years of experimentation, with that of pituitary extract in so far as its use has progressed up to the present time.

Ergot was used in obstetrics by the recognized medical profession as early as 1808,¹ and it might be interesting to read to you the conclusions of an article written by W. P. Dewees, Professor of Midwifery in the University of Pennsylvania in 1828.²

"The following rules for the use of the ergot, if attended to, I think will prevent any evil following its exhibition.

"1st. It should never be given before the membranes are ruptured, the os uteri dilated, and the external parts disposed to yield.

"2nd. It must not be used so long as the natural pains are efficient and competent to the end.

"3rd. But, should they flag, from any cause, it may be given; provided the labour be a natural

labour according to our acceptation of the term 'natural labour'; that is, when the head (if well situated), the breech, the feet, or the knees, present. For, independently of any accident which may complicate the labour, it is sometimes desirable, for the safety of the child, to hasten it when the natural powers are incompetent to this end.

"4th. And if the labour be accompanied by any such accident as flooding, convulsions, syncope, etc., it may sometimes be employed to great advantage, provided rules 1 and 2 are not violated.

"5th. It may be used very often with much advantage in every kind of premature labour; and at full time, when the placenta is not thrown off, and the uterus is found in a state of atony.

"6th. Where flooding takes place after the rupture of the membranes; the os uteri well dilated; the pains feeble, but the child well situated.

"7th. Where the head of the child has been left in the uterus by being separated from its body.

"8th. Where the uterus is painfully distended by coagula."

He also makes the statement in this article that "further, I am certain that I do not now use forceps once, where formerly I used them ten times."

We see from these rules how similar these indications are to those in which pituitrin was recommended by its earlier exponents.

In spite of the favorable experience of Dr. Dewees and many others, including that of Dr. Ryan³ in 1831, even up to a date as late as 1882,⁴ when there was a long discussion by the American Gynecological Society in which many favored and many did not the use of ergot in early labor cases, it was not until almost a century had passed that the majority of trained obstetricians have come to the conclusion that ergot is an unsatisfactory drug to use before the placenta is expelled.

Now let us turn to the experience with pituitary extract as shown in the literature up to the present. It was in 1909 that Blair Bell⁵ first used clinically extract from the posterior lobe of the pituitary body, and demonstrated its action. Since that time it has been more and more extensively used, and the literature⁶ on the subject has been voluminous. First everything was reported favorably, particularly from Germany, where its use was extremely popular; one distinguished gentleman going so far as to say that instead of sending our young doctors out with forceps, all that they needed was a package of ampules of pituitary ex-

tract and a hypodermic syringe. Its spread continued and was first used in this country extensively in the South, and reached a point where country physicians practically used it as a routine measure. It has even been used indiscriminately by some midwives with disastrous results.

It was not until about 1913 that reports began to come in of some not so favorable results. Edgar⁷ then reported cases of fatal compression of the foetus from its use in early first stage, premature separation of the placenta or even rupture of the uterus. Polak⁸ reported a case of rupture of the uterus, and stated that the extract had no place in first stage. Kosmak⁹ points out that the clinical action of pituitary extract may result in severe lacerations or complete rupture of uterus, and also post partum hemorrhage and asphyxiation of the child are apt to occur. Dr. Lee is quite opposed to its use and made the statement at the Gynecological Section of the A. M. A. in Boston that pituitary extract had no place in obstetrics during the labor. Mundell¹⁰ in 1915 analyzed the results following the use of pituitary extract in 3,952 obstetric cases, and later reported 1,293 cases collected during 1915 and 1916, as follows:

	1st Series	2nd Series
Total number of cases	3,952	1,293
Uterine rupture	8 (1 in 494)	12 (1 in 106)
Foetal deaths	27 (1 in 146)	34 (1 in 38)
Asphyxia pallida		41 (1 in 32)

These few reports¹¹ are only a very small minority of the number of fatalities found in the literature, and no doubt those reported are a much greater minority of those which actually happen.

As regards the child, the dangers reported are, an increased danger of intercranial hemorrhage from increased pressure, and also a danger of asphyxia pallida. There have been numerous reports of convulsions occurring in the child after the mother had been given pituitary extract prior to delivery.

So we see the tendency is working more and more towards the same conclusion that was reached after a century's experience with ergot. Now what is the difference in action of ergot and pituitary extract? Rucker & Haskell¹² have by several ingenious methods worked this out. By means of a Vorhees bag inserted in the cervix and this in turn attached to a manometer, they have obtained some very interesting drum records of

the action of both ergot and pituitary extract in the first stage, and then by means of the "external hysterography" of Rubsamen, they also have some records of uterine contractions in the third stage, following injections of ergot and pituitary extract. They came to the following conclusions:

"That the action of ergot and hypophysis solution upon the uterus is the same if large doses of ergot are used.

"The action of pituitary preparation is much much powerful than that of ergot.

"The action of both drugs varies greatly with different individuals."

Now it may come to pass that pituitary extract in time will meet with the same objections to its use before the placenta is expelled, and be held in the same disfavor, as is ergot in its use before that time.

But in the meantime we have a great many well trained men who recommend its use highly and use it constantly.

Use in Induction of Labor.

Watson¹³ of Toronto has reported a wonderful success in the induction of labor with pituitrin, but more especially with a combination of castor oil, quinine and pituitrin. His procedure is as follows:

- | | |
|------------------------|--------------------|
| "1. Castor oil | oz. i at 6 P. M. |
| "2. Quinine hydrochlor | grs. x at 7 P. M. |
| "3. Enema | at 8 P. M. |
| "4. Quinine hydrochlor | grs. x at 9 P. M. |
| "5. Quinine hydrochlor | grs. x at 12 P. M. |

"If labor pains do not begin by 9 A. M., i. e., fourteen hours after the first dose of quinine, pituitary extract $\frac{1}{2}$ c.c. is given intramuscularly. If labor pains begin, no further dose is given, but if there is no result, or if the pains initiated by the drug begin to pass off, the pituitary extract is repeated in half an hour. Further doses at half-hour intervals are given, up to a total of six doses, if necessary. If labor is then not definitely begun treatment is stopped, and a similar attempt with pituitary is made the next day, and if necessary the day after that."

In cases where he failed to induce labor by these means he used bags or bougies. He reports successful inductions in 90% of 250 cases, without untoward effects. Other writers, notably Cron,¹⁴ Seeley, Mundell, Bandler, Stein, and Wilson, have

also reported good results, but not as good as Watson's, by using smaller doses of pituitrin in 5 to 10 minims. I have only used pituitrin in a few cases for this purpose, and with the smaller doses have had success in the majority of these.

Use in First Stage of Labor.

There are some men who advocate its use in the first stage. Bandler⁶ of the Post Graduate of New York being one who uses it in almost every case where there is no dystocia present. If after careful examination of the patient there is found to be no obstruction to delivery, he believes that pituitrin should be used in both principara and multipara in small doses, $\frac{1}{3}$ of a c.c. and repeated when necessary every half hour. He is very enthusiastic, and after reading his article alone, one would come to the conclusion that obstetrics was at last made a simple process. He makes the statement that "now he never spends more than two hours in the house of any multiparous patient." On the other hand the vast majority of men do not advocate its use in the first stage of labor. In my own personal experience I have only used it in the first stage in a few cases, and then only when the cervix was soft and easily dilatable, and where there was present some uterine inertia and no other abnormality. In cases where pituitrin is used indiscriminately in this stage, I believe that the danger is greatest of ruptured uteri, badly lacerated cervixes or perineii, and fatal compression of the foetal head or asphyxia. If cases have not been thoroughly examined for disparity between foetal head and pelvis or other obstruction, the danger is increased a great deal. The action of pituitary extract is in the nature of a tonic contraction,¹² at least for the first few pains, and these contractions have been registered to last as long as 35 minutes.¹¹ If the child's head or even the child itself is under compression for that length of time, the danger of foetal death is evident.

Use in Second Stage.

This is the stage where there is more agreement as to the advisability of using the drug, although there are many who condemn its use even at this time. When the labor has progressed to the second stage, and the head has descended to the perineum, rotated anteriorly, and through inertia of the uterus alone is unable to be expelled, I believe

that pituitrin works in most cases like a charm. It is well, however, to be scrubbed up and ready with your anaesthetic, nitrous oxide or chloroform to control the strength of the pains, for I have found in my experience that if pituitrin is going to work at all it will work quickly and actively within 3 to 10 minutes. Most of cases in which I have used the drug during labor have been in this stage, and I have never seen any untoward effects as regards the child. As regards the perineum, however, I have had to watch sharp many times to avoid tears. I have used $\frac{1}{2}$ c.c. of Burroughs & Welcome preparation, which I believe is about twice as strong in action as the Parke Davis extract.

The majority of writers, and I believe rightly, condemn the use of the drug in any case but uterine inertia. Why, if there are good, substantial contractions, should we forcibly drive the head through the pelvis in the hope of saving an hour's time, to the detriment of the pelvic floor and added compression to the child's head? I have in mind a principara whom we have recently discharged from the City Hospital after a three months sojourn there. She had acute gonorrhea before delivery and was progressing satisfactorily in her labor, according to her story, but was given pituitrin and the baby was born after one tremendous pain, tearing cervix and perineum to the rectum, dragging the bladder from its pubic attachments. This was followed by a tremendous gonorrhoeal infection of the bladder, which was extremely obstinate in treatment because of the marked prolapse. The patient suffered excruciatingly from tenesmus for months, and is now a nervous wreck—all from the use of one hypodermic of pituitrin.

Use in Third Stage.

Most writers believe that in the large majority of cases pituitrin can be used safely in this stage. The only exception might be in cases of adherent placentas, where the contraction of the uterus might make later delivery of the placenta more difficult. Observers who have used the drug in this stage have reported diminished loss of blood, shortening of the length of the third stage with spontaneous delivery of the placenta in a larger proportion of cases than normally.

For post partum hemorrhage I give pituitrin generally in 1 c.c. doses, followed directly by 30 minims of ergonne hypodermically. The pituitrin

acts more quickly and emphasizes the action of the ergot, which has a more continued action. I believe that it is extremely valuable in these cases, and if reserved for these cases only, would be certainly uncondemned.

Uses in Caesarian Section.

Pituitrin is valuable in this operation, generally being given just prior to the primary incision and repeated as the placenta is being removed. More recently 1 to 2 c.c. have been infiltrated into the uterine incision to facilitate closure of the uterine wound. It is very often repeated in small doses post-operatively with good effect.

Conclusions.

1. Ergot and pituitrin are very similar drugs in their action, pituitrin being much the stronger of the two. According to the literature, they have passed through similar cycles in their uses up to a certain point, and it may be possible that pituitrin will finally be relegated to its use in the third stage even as ergot has.

2. Pituitrin is a dangerous drug to be used indiscriminately, its main dangers being uterine rupture, severe lacerations of cervix or perineum, premature separation of placenta, post partum hemorrhage, fatal compression of the foetal head, or asphyxia of the child.

3. It has been used successfully in the induction of labor near term, especially combined with castor oil and quinine.

4. It should be used in the first stage practically never, and then only after extreme care has been taken to exclude any existing obstruction, bony or otherwise, and only when the cervix is easily dilatable, and in the presence of uterine inertia.

5. In the second stage it can be used in selected cases; in the presence alone of uterine inertia with the head on the perineum in the anterior position, the obstetrician scrubbed up, with anaesthesia at hand to control pains, it may be given in $\frac{1}{2}$ c.c. doses. It should never be given to hurry labor in the absence of inertia.

6. It is useful in the third stage of labor to lessen bleeding, shorten the stage and help expel the placenta.

7. It is extremely useful in Caesarian Section and in post partum hemorrhage in conjunction with ergonne.

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CONTRIBUTIONS

MOONSHINE ASPHYXIA

By DR. L. L. ALBERT
CENTRAL FALLS, R. I.

The common amyl alcohol is iso-butyl carbinol. It is frequently formed in small quantities during the fermentation of corn, potatoes and other substances. When the alcoholic liquors are distilled, amyl alcohol passes over toward the end of the distillation generally accompanied by propyl, butyl, other alcohols and by certain ethers and compound ethers. A mixture of these substances is known as fusel oil, and from this liquid amyl alcohol may be obtained in pure state. It is an

oily, colorless liquid, having a peculiar odor and a burning acrid taste, soluble in alcohol but not in water.

A diluted⁸ solution of grape sugar under the influence of certain elements (yeast suffer decomposition, yielding carbon-dioxide and ethyl alcohol. About 95% of the sugar is decomposed, the rest forming glycerine 3%, succinic acid 5%, and fusel oil (the higher alcohols).

Among the foreign population, and sometimes higher up, a new form of poisoning (asphyxia) occurs since the advent of the 18th amendment.

This high, penetrating, acrid odor from the distillation of alcohol is, in small, closed-in areas, fairly poisonous. While not odorless, it is difficult to detect. But it is very noticeable when one comes in from the open fresh air to the contaminated area. I should say it is as poisonous as illuminating gas in the same concentration, and causes the same train of symptoms. Nevertheless, the moonshine-making public apparently is ignorant of these dangerous consequences.

In the open, the noxious gases emanating from the distillation of alcohol are diluted with air sufficient to remove all toxicity; but in small rooms or enclosures the smell is enough to make the air distinctly disagreeable, even if not positively unhealthy. Doors and windows are usually barred to prevent the odor from escaping and to avoid detection.

The gases of moonshine distillation are cumulative and progressive, resulting in secondary anemia, nervous disorders, headaches, malaise. The remedy is, of course, plain to law-abiding people.

What the ultimate effects of such frequent, sub-acute asphyxiations may be, is a problem on which there is not yet sufficient evidence to justify positive assertions, but tuberculosis must be considered as a possible complication.

Fatal cases, I have never seen, nor have I ever heard reported. The result is not impossible, as I have treated as many as twelve children and adults in one house, all of them sick enough to stay in bed for two days. The odor is very persistent, and even with windows wide open, it takes quite some time to get rid of the smell.

The treatment of cases is, of course, the same as any other asphyxia whether due to illuminating gas, sewer gas or automobile exhaust gas;—that is, fresh air and tonics.

THE RHODE ISLAND MEDICAL JOURNAL

Owned and Published by the Rhode Island Medical Society
Issued Monthly under the direction of the Publication Committee

FREDERICK N. BROWN, M.D., *Editor*
309 Olney Street, Providence, R. I.

FRANK MEARS ADAMS, M.D., *Business Manager*
224 Thayer Street
Providence, R. I.

CREIGHTON W. SKELTON, M. D., *Advertising Manager*
266 Broad Street, Providence, R. I.

ASA S. BRIGGS, M. D.
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Advertising matter must be received by the 10th of the month preceding date of issue.

Advertising rates furnished upon application, to the business manager, Frank M. Adams, M. D., 224 Thayer Street, Providence, R. I.

Reprints will be furnished at the following prices, providing a request for same is made at time proof is returned: 100, 4 pages without covers, \$6.00; each additional 100, \$1.00. 100, 8 pages, without covers, \$7.50; each additional 100, \$2.80; 100, with covers, \$12.00; each additional 100, \$4.80. 100, 16 pages, without covers, \$10.50; each additional 100, \$3.00; 100, with covers, \$16.00, each additional 100, \$5.50.

SUBSCRIPTION PRICE, \$2.00 PER ANNUM. SINGLE COPIES, 25 CENTS.

Entered at Providence, R. I. Post Office as Second-class Matter.

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EDITORIALS

PHYSIOTHERAPY IN MEDICINE.

We physicians, by reason of our training and traditions, are conservative folks; we are little given to invoking strange gods and it is quite true to say that no honorable member of our profession has ever been the protagonist of fanaticism. But conservatism has dangers of its own, not the least of which is the tendency to cling to the old ways of doing things—a tendency which, by reason of its very respectability and prestige, is likely

to conceal its closeness to obscurantism. Every new idea, every original or novel method of treatment, has had to fight its way to acceptance. And as in the past, so in the present, this process is going on, with the result that we observe physiotherapy struggling to gain for itself a place in the hierarchy of medical orthodoxy.

It is no strange thing surely, when one stops to reflect for a moment, that the diverse forces of nature, subdued to the uses of man, should prove of value in the art of healing. For if natural products such as plants and minerals have for centuries helped us in our ministrations, why not also

those other equally, perhaps more potent forces, light, heat, water and electricity? We do but strain out the gnat and swallow the camel when we look askance at these latter because they have been too often used by charlatans and quacks, for who but a peasant woman in Shropshire gave us digitalis, and did not the Indian introduce to us quinine, while if we are fastidious, we shall not inquire too minutely about the company mercury has kept. There is wisdom in the remark of Aristotle that it is not things themselves, but the uses to which they are put which ennoble or degrade. If we physicians do not elevate physiotherapy as we have tried to elevate drug therapy and psychotherapy, then it is certain that irregular practitioners will continue to exploit and degrade it.

The worst enemies of physiotherapy have been, and are, its friends. When you finish reading the average book on the subject you lay it down with the feeling that you have been reading not the sound conclusions of a critical mind but rather the enthusiastic encomiums of a man whose judgment leaves something to be desired. You are fed, sometimes even fed up, on vague generalities, instead of being presented with the solid pabulum of fact, and of course you gather the impression that the whole business is a department of fiction. But it is not fiction—the war proved that. What is lacking in much of our physiotherapy is the scientific spirit, the attitude of mind which verifies hypotheses and brings general principles to the test of properly controlled experiments. What would be thought of a man who prescribed digitalis indiscriminately on the belief that “digitalis is good for dropsy?” Well it is no better with the man who orders electricity or massage or cold bathing on the principle that they are “good” for something or other. What we need, and need sorely, is the knowledge as to when and how and precisely in what morbid conditions we may with benefit resort to the various modes in physiotherapy. This knowledge we do not possess except in a fragmentary way. The future will no doubt supply it; and when it does we shall have added yet another useful string to our therapeutic bow. In the meantime we may, perhaps, by patient endeavor learn something from the critical evaluation of our own experience, enough at any rate to guide us until such time as more extended clinical studies shall have established standards of permanent validity.

PRO BONO PUBLICO

Recent newspaper articles, often the only way in which news reaches the medical and lay public, would seem to indicate that a change is taking place in that branch of medical thought which deals with health problems, and that one must readjust one's conception of the proper and particular functions of Health Departments. While most persons understand something of the microbic origin of most diseases they are as yet uninformed as to those less well known problems which affect our comfort and convenience. Until now it has been supposed that offensive odors, unnecessary noise, unsightly premises, untidy streets, polluted streams and divers other offenses against civic decency were problems to be solved by that branch of our State and City organizations which had to do with public health, and which were founded and fostered for those purposes and with these things in mind.

With the development of our cities' new problems, such as air and stream pollution, have arisen, problems upon which much might be written. And it appears that there is a growing tendency on the part of our health officials to devote their attention to those features only which are known to be the direct cause of specific disease. For example,—it is known that an epidemic of sore throat may come from an infected milk supply and that diphtheria can come only from the K.L. bacillus through some transmitting medium. The health department will prosecute the study of such cases with unrelenting vigor. But let a factory chimney emit fumes which cause or seem to cause an irritated throat, and a feeling of malaise and nausea, and the health department is not interested because real disease and death does not result. To illustrate again,—the public health is guarded by frequent examinations of the water supply, but untreated sewage is allowed to flow into our streams and into the sea, thereby polluting fish, shell fish and bathers and rendering the shores unsightly and foul. In the matter of sewage disposal a large and prosperous community of this state has by overwhelming numbers vetoed the installation of a modern system of sewerage. No campaign of education has been urged to teach communities that sewerage and civic decency are one and the same thing, so householders of this com-

munity will continue to deposit their waste in their back yards, for years to come.

Nor is the City of Providence blameless in this respect, nor has it among its many progressive campaigns launched one for a bigger and better sewerage system or for cleaner sanitary conditions. Flowing through the very heart of this fair city is a nasty, foul-smelling and stinking stream, a disgrace to any municipality. The condition of these streams has improved but little in the past twenty years. Foul odors and unsightly streams may not cause definite disease and distribute specific pathogenic organisms, but they destroy our comfort and peace of mind, to both of which, in this day of culture and civilization, we are entitled. There are, emptying into the Seekonk river, no less than five sewers between Red Bridge and Butler Hospital, and it is an every day matter to see human feces floating about. The management of some cities resembles that of an individual of moderate means who spends his money on rose gardens and gives his children music lessons but continues to use the old-fashioned country out house.

Not long ago the menace of lead in drinking water was urged by physicians and the chemist of the State Board of Health. Two sorts of opinions were formed by the medical profession, that which felt that "there is nothing in the lead matter" and the other that it was neither wise nor wholesome to drink dilute solutions of lead or of any other irritant poison. The lead menace still obtains; current examinations of the water supply showing 0.22 milligrams per litre or parts per million, an amount which is distinctly detrimental to health. But the City of Providence continues to use lead pipe for service connections and will continue to do so until there is sufficient interest shown by the medical profession or the informed public. The same public servants who dumped untreated sewage into the Providence river for four years are not going to be bothered by a trifle of lead.

Admitting for purposes of argument that noise, filth, dirt, inadequate sewerage systems, etc., do not cause actual disease, it does not follow that nuisances should be allowed or encouraged, a thing that would immediately come about were this novel idea as to the functions of health departments to prevail. It is impossible to turn these matters over to the police, this is simply "passing

the buck." There are not enough policemen anyway, and the city is none too well protected.

The time has come for this city and state to clean house, to provide a modern and adequate system of sewage disposal, to clean up the malodorous and infamous Providence River, to give the several health departments police powers and sufficient funds and support for the proper performance of their duties, to enact and enforce regulations for quiet rest hours, to insure an uncontaminated water supply, and to educate its children in civic as well as personal hygiene.

SCIENTIFIC MEDICINE AND ITS POSSIBILITIES

Medicine has shown remarkable achievements during the last half century, indeed, during this period there has been more real progress than in the preceding five hundred years. Antisepsis in surgery, the work of Lister and others, was a distinct step in advance. This was followed by asepsis, the basic principle of modern surgery as opposed to ancient methods.

The development of bacteriology, pathology, biological chemistry, etc., opened up new fields of endeavor and really laid the foundation for scientific medicine, as we know it. Through these newer branches of medicine, the causative factor in tuberculosis, typhoid fever, diphtheria, syphilis, gonorrhoea, malaria and yellow fever, etc., was given to the world, and so was of inestimable value in making a diagnosis in these diseases. With more knowledge of these diseases, came better methods of treating them as well as, to an extent, preventing them.

This increased knowledge has been the means of lessening the mortality rate in general but not to the extent that it should have done, as regards preventing the vascular degenerative changes of senility. This is probably explained by the enormously increased hurry and worry of modern life. Again, according to the authorities, the most important single item of mortality, is the record for the first year of life, because of the fact that 15 per cent of all deaths that occur each year, are of children in the first year. In 1921, however, in the Birth Registration Area of the United States,

the infant mortality dropped to 76 per 1000 births—in many United States cities it is below 40. The mortality in the years of childhood can be further reduced by a more whole-hearted effort to control typhoid, scarlet fever, diphtheria, whooping cough, tuberculosis and the respiratory diseases.

Preventive medicine has already accomplished notable results, by its efforts to decrease industrial accidents, to secure more sanitary working and living conditions and by urging an annual complete physical examination in all persons, who have reached the fourth decade of life.

OBITUARY

GEORGE EATON SIMPSON, M.D.

George Eaton Simpson, M.D., Assistant Superintendent of the State Hospital for Mental Diseases, Howard, Rhode Island, died on July 9, 1922, in the fifty-second year of his age.

Dr. Simpson was born in Charlestown, Massachusetts, on December 15, 1870. He was a member of an old Maine family, being a son of Myrick and Laura A. (Sawyer) Simpson, and a grandson of John and Sophronia (Doyle) Simpson, all natives of that State.

When a small child his parents removed from Charlestown, Massachusetts, and later returned to the State of Maine, taking up their residence in the town of Newcastle, where Dr. Simpson received his preliminary education, fitting for college at the Lincoln Academy.

Dr. Simpson was graduated from Bowdoin College in the class of 1895 with the degree of Bachelor of Arts. Following graduation he was the Principal of Washington Academy at East Machias, Maine, for a year. He determined to take up medicine as a profession, and, with this end in view he then entered Bowdoin Medical College and received the degree of Doctor of Medicine from that institution in 1899.

Immediately upon his graduation he received the appointment of interne to the State Infirmary and to the State Hospital for Mental Diseases at Howard, Rhode Island. On the completion of his internship, he engaged in private practice in the City of Providence and while so engaged he was appointed in 1901 visiting physician to the State Prison and Providence County Jail.

In 1905 he was appointed by the Board of State Charities and Corrections Assistant Superintendent to the State Hospital for Mental Dis-

eases at Howard, Rhode Island. He relinquished private practice at this time to enter upon this office. For sixteen years he devoted himself assiduously to the duties of this responsible position.

The whole period of his connection with State service covered twenty-two years. He had a broad acquaintance throughout the State and was recognized by both the medical and legal professions as an able physician and psychiatrist. His services were not infrequently sought as a specialist in mental diseases before the courts of Rhode Island. The natural trend of his mind gave him a taste for painstaking inquiry into all the aspects, whether medical, legal or social, which center around cases of mental disease. His ferreting out of the legal settlements of cases committed to the State Hospital who were aliens, either to this country or state, and the consequent returning of them to their homes has saved Rhode Island many thousands of dollars.

Dr. Simpson was a Phi Beta Kappa man and a member of the Zeta Psi Fraternity. He was associated with the local lodge of Independent Order of Odd Fellows. He was a member of the Rhode Island Medical Society, The Providence Medical Association, The Rhode Island Medico-Legal Society, The New England Society of Psychiatry, and The American Psychiatric Association.

In 1902, Dr. Simpson was united in marriage with Minerva Maloon of East Machias, Maine. Three daughters were born of this union. They, with their mother, are left to mourn his untimely death. He also leaves a brother, Edgar M. Simpson of Bangor, Maine, and a sister, Mrs. Fred Hilton of Augusta, Maine.

During a painful illness which continued for more than a year previous to his death, he bore his suffering courageously and uncomplainingly. All who had official relations with Dr. Simpson recognized his untiring devotion to his work and his valuable service throughout all these years to the State of Rhode Island, and his many acquaintances throughout the State feel in his death the loss of a sterling member of society.

In his death this Association has lost a member whose memory can be held as a conspicuous example of a man of the highest integrity in all relations of life and one whose professional attainments and years of devotion to his special field of medicine secured for him an honored place in the medical profession.

ARTHUR H. HARRINGTON
HENRY A. JONES
DENNETT L. RICHARDSON

HOSPITALS

RHODE ISLAND HOSPITAL

The Crawford Allen Memorial Hospital in East Greenwich closed for the season on November 1, 1923. During the six months during which this summer branch for children was in operation, 110 children received treatment.

Plans have been completed and work started on a new building to house greatly increased X-ray equipment and a new physio-therapy department. It is hoped to have this addition to the facilities of the hospital in operation in about four months.

At noon on November 14 the annual meeting of the Corporation was held at the hospital. Reports of the various departments were read and officers elected for the ensuing year.

On October 27, Dr. John Champlin, Jr., was married to Miss Nita Helen MacDonald in Westerly, R. I. Dr. John A. Bolster, who recently completed his internship here, has opened an office at 532 Broad street in this city; while Dr. Cyril M. Lydon has begun the practice of medicine at 272 Bowdoin street, Dorchester, Mass.

Recent appointments to the interne staff include: October 1, 1923: Dr. Donald M. Green, Syracuse; Dr. Frank Bostrom, Jefferson, January 1, 1924: Dr. Robert S. Buol, Harvard; Dr. Cecil C. Dustin, Harvard. April 1, 1924: Dr. Charles Farrell, Tufts.

SOCIETIES

PROVIDENCE MEDICAL ASSOCIATION.

The regular monthly meeting of the Providence Medical Association was held at the Medical Library, 106 Francis Street, Monday evening, November 5, 1923, at 8:45 o'clock.

Program as follows—Paper: Intersusception in adults, Dr. James M. Gallison, Boston; discussion opened by Dr. George A. Matteson and Dr. Raymond G. Bugbee. Paper: Complications following Surgical Operations, Dr. Charles O. Cooke; discussion opened by Dr. Henry J. Hoyer and Dr. George Gardner.

The Standing Committee had approved the following applications for membership, William N. Hughes, M.D., Michael J. O'Connor, M.D., Al-

fred L. Potter, M.D., who were duly elected members of the Association. Collation followed.

DR. PETER PINEO CHASE, *Secretary*

RHODE ISLAND OPHTHALMOLOGICAL AND OTOLOGICAL SOCIETY

The bi-monthly meeting of the R. I. O. and O. Society was called at the R. I. Hospital, Tuesday, October 23, 1923, at 5 P. M., the president, Dr. F. H. Bigelow, presiding.

The minutes of the previous meeting were read and approved. Report of committee appointed to inquire into the visual acuity test required of motor operators in various states, accepted as progressive.

Moved and seconded that this society go on record as favoring legislation requiring the labeling as poisonous all household articles containing caustics, however small the per cent. in each article.

The name of Dr. Francis B. Sargent was recommended for membership by Drs. Hawkins and Leech, and was referred to the standing committee.

There were presented some very interesting and instructive cases in Otolaryngology by Drs. Bigelow and Astle, and in Ophthalmology by Dr. Leech. After the cases were eagerly and interestingly discussed by the members present, a buffet luncheon was served in the home officers' quarters.

Members present were Dr. Bigelow, Dr. Hawkins, Dr. Dowling, Dr. Ventrone, Dr. Messinger, Dr. Leech and Dr. Walsh.

Meeting adjourned at 7:45 P. M.

J. J. WALSH, *Sec'y.*

Standing committee for the year, H. Arlington Fisher, M. D., Christopher J. Astle, M. D., Howard E. Blanchard, M. D.

WASHINGTON COUNTY MEDICAL SOCIETY.

The quarterly meeting of the Washington County Medical Society was held at the Elm Tree Inn, Westerly, Thursday, October 11, 1923, at 11 A. M. Paper: Dr. Briggs on "Diphtheria."

W. A. HILLARD, M.D., *Secretary*

CASE REPORT

SPONTANEOUS VERSION.

PROVIDENCE LYING-IN HOSPITAL

Mrs. E. M.—Aug. 23, 1923.—Gravida ii. Full term. One normal labor. Pelvic measurements normal. Labor began at 7:45 P. M. on August 23, 1923. Examination at 11 P. M.

External palpation was very satisfactory because of a flabby, soft abdomen, and revealed a small fetus and a definite occipital posterior position. Fetal heart was heard best in right lower quadrant, low and close to median line.

Vaginal examination revealed a vertex presentation, membranes intact, cervix thinned out, and external os about three fingers dilated.

One hour later, marked bulging of the perineum was reported and preparations for immediate delivery were made. First to appear through the vulva were the unruptured membranes, which were punctured, and a left hand protruded into the outside world. The uterine contractions were very strong and in about five or six pains the left arm, left shoulder, left chest, left abdomen, left buttock and right buttock appeared in succession at two or three minute intervals. During this procedure the operator's finger was kept in the interspace over the fetal heart and no interference with the fetal circulation was noted until the buttocks had appeared when the right shoulder and head were rapidly extracted. Child was cyanotic and was resuscitated without difficulty. Weight, 4 lbs. 14 oz.

Dr. Lee states that spontaneous version is not infrequent in transverse positions with large pelvis and small children, but this case was a vertex presentation, both by external palpation and vaginal examination.

EARL A. BOWEN, M.D.

MISCELLANEOUS

PRESENT-DAY SOURCES OF COMMON SALT IN RELATION TO HEALTH.

Emery R. Hayhurst, Columbus, Ohio (*Journal A. M. A.*), comments on the natural deficiency of

iodin in diets; yet its scarcity in nature has been long known to geochemists, as well as its infrequently be handled commercially in a manner to frequency of occurrence in salt sources by commercial and industrial chemists. While iodine may occur in natural deposits along with chlorine, usually in the form of the sodium salt, it is never obtained from such sources commercially because it occurs in too limited quantities. Chili saltpeter is the chief source of iodine. The sea is the great storehouse of iodine where it completes a cycle from inorganic compounds to organic life and return. The salts of sea water are constant in both quality and quantity. Sodium chloride comprises 77.8 per cent., magnesium chloride 10.9 per cent., with many compounds, including sodium iodide, which composes the remaining 11.3 per cent. It has an average total salinity of 3.4404 per cent. All of the salts in sea water are unusually soluble in plain water. The great solubility of sodium iodide accounts for its almost complete absence from the land surface and, perhaps, for some of the peculiarities noted in regard to the incidence of goiter. Authorities are agreed that goiter is infrequent in both animals and man along the sea. The same is true, also, of some fishes (salmons) which inhabit both fresh water and sea water, tending to develop goiters in the former, and none in the latter. Apparently, sea animals do not have goiter. Practically all salt used in the United States for dietary consumption is obtained from inland sources by the evaporation of brines, which for the most part are inherently free of iodine. Irrespective of the source, whether sea water or inland deposits, the modern processes of preparing and purifying salt free it from all traces of iodine, as well as its other naturally associated elements, many of which are identical with the body fluids of higher animals. Hayhurst points out that of the dependable sources of iodine in nature—sea air, sea food and sea water—it is to sea water, used perhaps in place of common salt as a condiment, that inland dwellers should look. This substitution would appear to offer a complete solution to the iodine deficiency problem, if nothing else, while evidence would tend to show that other constituents of sea water have also an undoubted place in the economy of the higher animal organism, perhaps to the extent of precluding some diseases which are likewise, possibly, of a deficiency type. Common salt for dietary purposes should include not only sodium chloride but also sodium

iodid, and undoubtedly many of its other original concomitants. For geochemical reasons, great care should be taken in selecting its source, if it is not actually derived always from sea water. It must tain these constituents.

CURE OF INFANTILE RICKETS BY SUNLIGHT.

Nine rachitic infants were placed by Alfred F. Hess and Margaret B. Gutman, New York (*Journal A. M. A.*), in the direct sunlight for from one-half hour to several hours, the period varying according to the sun's intensity, the clemency of the weather, and the sensitiveness of the baby. Care was taken that the infants were warm. It was found quite sufficient to expose the arms and legs, although it is preferable, when the temperature permits, to expose the trunk as well. Previous to treatment, the majority of infants showed the clinical symptoms of mild rickets, characterized by beading of the ribs, and the characteristic changes in the epiphyses as seen by roentgen-ray examination. All the children were receiving the customary milk mixtures and orange juice, the older ones getting cereal in addition. Reliance was not placed entirely on the roentgen-ray examination of the bones. In every instance in which heliotherapy was employed, the rachitic signs diminished, as was demonstrated clinically and by roentgen ray, and the general condition improved. The inorganic phosphorus of the blood of the rachitic infants decreased from month to month, starting generally below 3.5 mg. per hundred cubic centimeters of blood, and gradually being restored to the normal level of about 4 mg. This result is similar to that which has been attained by means of cod liver oil, which must be considered a specific for this disorder. This observation is of interest both as additional testimony of the curative value of sunlight in this disorder, and as evidence that the curative process occasioned by these divergent therapeutic agents will probably be found to be fundamentally the same. These results establish a chemical basis for the use of heliotherapy in rickets. Furthermore, they furnish the first definite evidence of metabolic change in the animal body brought about by the solar rays.

A PLEA FOR ACCURACY.

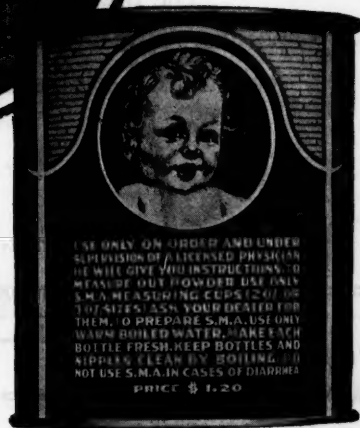
Inaccuracy of description is a common sin in medical literature. Some articles give the reader the impression that the author has not been informed that there exist standard systems of weights and measures. We are told that a nodule the size of a chestnut was present in the abdominal wall, or that an ulcer the size of a dime was located on the forearm. These descriptions may mean something to the writer who saw the objects, but they carry much less information than they should to the reader. Too many writers seem to forget that medical literature is international, and that their reports, if of any value, will be read in all parts of the world, and possibly for many years. Just what will the Russian scientist know about the size of a dime? How large is a chestnut? Very different sizes will register in the minds of an Italian and a New Englander. The orange is a popular unit of measurement; but what sort: Messina or Florida? They are as one to five or more. Coins fluctuate from generation to generation, vegetable products vary in size, and many are referred to by local names. What are foreigners to understand by references to such standards of measurement as horse beans, cow peas, footballs (Rugby or soccer not specified), baseballs, bird shot (for snipe or turkey?), ping pong balls or grapefruit? How big is a cherry, a potato, a watermelon? Yet these are used as if centimeters or inches had never been defined. The literature is full of lesions that are "fünfpennigsgross" or "sweimarkstück-gross"; but with the disappearance of metal coins in central Europe, what will these terms mean to future generations? Imagine a scientist in Dutch Java fifty-years from now trying to figure out how large a "fifty kopeck sized eruption" really was. So inaccurate and inconsiderate become the thoughts of men who use such units of measurement that the statements often are even grotesquely vague: we have seen tumors described as the size of a bean, the size of a nut, the size of a bird's egg, and once, most delightful of all, a patient presented a tumor mass "the size of a hat." There's a doctor for you—to whom fashion's vagaries mean nothing! We are still looking for a lesion "as long as a piece of string," and confidently expect to read about it some day.—*Jour. A. M. A.*



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